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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,710	08/07/2006	Brad A. Lovett	60,158-294PUS1	4638

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EXAMINER	
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ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,710	LOVETT ET AL.	
	Examiner	Art Unit	
	MICHELE JACOBSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-6,10-19,21,23-25 and 31-38* is/are pending in the application.

4a) Of the above claim(s) *14-19,21,23-25 and 34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-6,10-13, 31-33 and 35-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Examiner Notes

1. Any objections and/or rejections made in the previous action, and not repeated below, are hereby withdrawn.

Election/Restrictions

2. Claims 14-19, 21, 23-25 and 34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/20/09.

Claim Objections

3. Claims 31 and 37 are objected to because of the following informalities: Naphthalate is spelled "na**pth**alate" . Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4-6, 10-12, 31-33 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jadamus et al. U.S. Patent No. 6,428,866 (hereafter referred to as Jadamus).

6. Jadamus teaches a multilayer pipe for fuel transport applications comprising an outer layer of a thermoplastic composition and an inner layer of an electrically conductive thermoplastic composition wherein the electrically conductive composition contains graphite fibrils. (Col. 1, line 54-Col. 2, line 2) The inner and outer layers are recited to comprise polyamides such as copolyamides comprising isophthalic and terephthalic acid residues and mixed aliphatic/aromatic polycondensate polyamides. (Col. 2, lines 20-26, 41-44, 50-51) The polyamides may be impact modified. (Col. 3, line 11) The ratio of the thickness of the inner layer to the thickness of the outer layer is recited to be between 1:5 to 1:100 (inner layer = 17% - 1% of the total thickness) The graphite fibrils render the surface resistance of the inner layer to preferably be less than 10^5 Ω/sq. (Col. 5, lines 29-31)

7. An optional barrier layer between the inner and outer layers comprising a thermoplastic molding composition such as polyester, polyvinylidene fluoride, ETFE, polyolefin or EVOH may also be present. (Col. 5, lines 1-6) Polyamide is disclosed as an interior layer in Table 1. (Table 1) Fluoropolymers such as ethylene-cholorotrifluoroethylene (ECTFE) and polyesters such as polybutylene naphthalate are recited to be useful inner layers for the pipe disclosed. (Col. 4, lines 26-36)

8. Jadamus is silent regarding the percentage of amide groups attached to aromatic rings, corrugation of the fuel tube and the presence of a heat stabilizer.

9. Regarding claim 1: Jadamus clearly recites a vehicle tubing comprising two polyamide layers in which the inner polyamide layer is electrically conductive wherein polyamides comprising aromatic groups are recited. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the amount of aromatic polyamide in the compositions for the fuel hose recited by Jadamus depending on the properties of the final tubing that were desired. Aromatic polyamides are well known in the fuel hose art to provide excellent barrier properties and strength and it would have been obvious to one of ordinary skill to vary the result effective variable of the amount of aromatic polyamide present in order to optimize these properties. The amount of aromatic polyamide present is directly related to the percentage of amide groups attached to aromatic rings since aromatic polyamides are defined they the attachment of amide groups to aromatic rings. This obvious optimization of the amount of aromatic polyamide in the inner and outer layers would have therefore produced the invention claimed in claim 1.

10. Regarding claims 4, 6-8, 10-12 and 33: Jadamus discloses an impact modifier with the inner layer having a thickness between 50%-10% of the total thickness and being electrically conductive by means of carbon fibers with a surface resistivity between 10^2-10^7 Ω/sq claimed in claims 1, 4, 6, 10-12 and 33.

11. Regarding claims 5, 31 and 35-37: Jadamus disclose an embodiment with an additional barrier layer comprising the same materials as claimed in claims 5 and 31. Table 1 discloses the use of polyamide as an interior layer as claimed in claim 36. ECTFE and polybutylene naphthalate are both disclosed to be useful materials for the

inner layer of the tubing and therefore substitution of these materials for the fluoropolymers and polyester disclosed for the barrier layer would have been obvious to one of ordinary skill in the art at the time the invention was made because these materials were recognized to perform the equivalent function of providing barrier properties. The selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination. ("Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle." *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious)) (MPEP 2144.07) This obvious selection of a known material based on its suitability for its intended use would have produced the same inventions claimed in claims 35 and 37.

12. Regarding claim 32: The examiner takes official notice that it is universally known in the fuel hose art to provide heat stabilizers to polymers that will be employed in applications where they are exposed to high heat. Since fuel hoses are used in engines, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have added a heat stabilizer to the aromatic polyamide recited by Jadamus in order to improve the stability of the hose under the high temperature conditions it would be employed in. This obvious improvement to the invention of Jadamus would have produced the invention as claimed in claim 32.

13. Claims 13 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jadamus et al. U.S. Patent No. 6,428,866 (hereafter referred to as Jadamus) and Hegler U.S. Patent No. 3,538,209 (hereafter referred to as Hegler).

14. Jadamus teaches what has been recited above but is silent regarding corrugating the outer layer of the hose while the inner layer remains non-corrugated.

15. Hegler teaches a double walled plastic tube comprising a corrugated outer layer and a non-corrugated inner layer. (Col. 2, lines 17-25) Corrugation of the outside provides the tubing with flexibility while the smooth surface of the inside is beneficial for pipes through which liquid is to be pumped. (Col. 1, lines 55-62)

16. Regarding claim 5: The examiner takes official notice that it is universally known in the fuel hose art to provide corrugation to the exterior of hoses in order to increase their flexibility. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have corrugated the exterior surface of the hose disclosed by Jadamus to increase the flexibility of the hose while leaving the interior layer uncorrugated as taught by Hegler since the pipes disclosed by Jadamus are intended to have liquid pumped through them. The obvious utilization of this configuration according to the teachings and benefits known in the prior art would have produced the invention as claimed in claim 5.

17. Regarding claim 38: It would have been obvious to one having ordinary skill in the art at the time the invention was made to have left areas of the tubing that were not required to be flexible uncorrugated. This would have produced a tubing with alternating corrugated and non-corrugated sections as claimed in claim 38.

Response to Arguments

18. Applicant's arguments filed 10/20/09 have been fully considered but they are not persuasive.

19. Applicant has asserted on page 7 of the remarks that the weight percent of aromatic polyamide is not related to the percentage of polyamide groups attached to aromatic rings and that the "percentage of amide groups attached to aromatic rings relates to the chemical structure of the aromatic polyamide rather than the total amount of aromatic polyamide present". The "chemical structure" referred to by applicant appears to be the recitation that "the amide groups are attached to aromatic rings". The term aromatic polyamide as it is well known in the art refers to polyamides without aliphatic units in the main chain. Therefore, in an aromatic polyamide, the amide groups are all attached to aromatic rings. Therefore, the percentage of amide groups would be directly related to the amount of polyamide present. As such, applicant's arguments regarding the relationship between the percentage of aromatic polyamide present and the limitations claimed are not found persuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson
Examiner /M. J./
Art Unit 1794

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794